

TRANSLATION

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference PG 06170WO	FOR FURTHER ACTION	See Form PCT/IPEA/416
International application No. PCT/EP2004/012698	International filing date (<i>day/month/year</i>) 10.11.2004	Priority date (<i>day/month/year</i>) 14.11.2003
International Patent Classification (IPC) or national classification and IPC F16D33/04, F16D33/06, F16D33/16		
Applicant VOITH TURBO GMBH & CO. KG		

1.	This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.	
2.	This REPORT consists of a total of <u>7</u> sheets, including this cover sheet.	
3.	This report is also accompanied by ANNEXES, comprising: a. <input checked="" type="checkbox"/> (<i>sent to the applicant and to the International Bureau</i>) a total of <u>5</u> sheets, as follows: <input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions). <input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box. b. <input type="checkbox"/> (<i>sent to the International Bureau only</i>) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).	
4.	This report contains indications relating to the following items: <input checked="" type="checkbox"/> Box No. I Basis of the report <input type="checkbox"/> Box No. II Priority <input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability <input type="checkbox"/> Box No. IV Lack of unity of invention <input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement <input type="checkbox"/> Box No. VI Certain documents cited <input type="checkbox"/> Box No. VII Certain defects in the international application <input checked="" type="checkbox"/> Box No. VIII Certain observations on the international application	

Date of submission of the demand	Date of completion of this report
Name and mailing address of the IPEA/EP	Authorized officer
Facsimile No.	Telephone No.

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International application No.

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Box No. I

Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ This report is based on translations from the original language into the following language _____, which is the language of a translation furnished for the purposes of:
- ☐ international search (Rule 12.3 and 23.1(b))
- ☐ publication of the international application (Rule 12.4)
- ☐ international preliminary examination (Rule 55.2 and/or 55.3)
2. With regard to the **elements** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:
- ☐ the international application as originally filed/furnished
- ☒ the description:
- pages 1-22 _____ as originally filed/furnished
- pages* _____ received by this Authority on _____
- pages* _____ received by this Authority on _____
- ☒ the claims:
- nos. _____ as originally filed/furnished
- nos.* _____ as amended (together with any statement) under Article 19
- nos.* 1-18 _____ received by this Authority on 18.08.2005 with letter
- nos.* _____ received by this Authority on of 16.08.2005
- ☒ the drawings:
- sheets 1/4-4/4 _____ as originally filed/furnished
- sheets* _____ received by this Authority on _____
- sheets* _____ received by this Authority on _____
- ☐ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.
3. ☐ The amendments have resulted in the cancellation of:
- ☐ the description, pages _____
- ☐ the claims, nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____
- ☐ any table(s) related to sequence listing (*specify*): _____
4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
- ☐ the description, pages _____
- ☐ the claims, nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____
- ☐ any table(s) related to sequence listing (*specify*): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

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International application No.

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Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement																					
1. Statement	<table><tbody><tr><td rowspan="2">Novelty (N)</td><td>Claims</td><td><u>1-18</u></td><td>YES</td></tr><tr><td>Claims</td><td><u></u></td><td>NO</td></tr><tr><td rowspan="2">Inventive step (IS)</td><td>Claims</td><td><u>1-18</u></td><td>YES</td></tr><tr><td>Claims</td><td><u></u></td><td>NO</td></tr><tr><td rowspan="2">Industrial applicability (IA)</td><td>Claims</td><td><u>1-18</u></td><td>YES</td></tr><tr><td>Claims</td><td><u></u></td><td>NO</td></tr></tbody></table>	Novelty (N)	Claims	<u>1-18</u>	YES	Claims	<u></u>	NO	Inventive step (IS)	Claims	<u>1-18</u>	YES	Claims	<u></u>	NO	Industrial applicability (IA)	Claims	<u>1-18</u>	YES	Claims	<u></u>	NO
Novelty (N)	Claims		<u>1-18</u>	YES																		
	Claims	<u></u>	NO																			
Inventive step (IS)	Claims	<u>1-18</u>	YES																			
	Claims	<u></u>	NO																			
Industrial applicability (IA)	Claims	<u>1-18</u>	YES																			
	Claims	<u></u>	NO																			
2. Citations and explanations (Rule 70.7)	<p>1. This report makes reference to the following document:</p> <p>D1: US-A-2 731 119 (BURDETT HARRY W ET AL) 17 January 1956 (1956-01-17)</p> <p>2. D1 is regarded as the prior art closest to the subject matter of claim 1. It discloses (the reference signs in parentheses refer to D1):</p> <p>a hydrodynamic coupling</p> <ul style="list-style-type: none">- having an input that can be coupled to a drive (28) and an output that can be coupled to a drive output (10);- having a hydrodynamic component comprising at least one primary impeller (24) and a secondary impeller (18) which, together, form an operating chamber that can be filled with operating material;- having a switchable coupling (50,52) comprising at least two coupling elements that can be operatively linked in a																					

Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
	<p>frictionally engaged manner directly or indirectly via intermediate elements, the two coupling elements being one first (50) coupling output element that is at least indirectly connected in a rotationally fixed manner to the output and an adjusting device (18) associated therewith;</p> <ul style="list-style-type: none">- having a stationary or rotating housing (16) that surrounds at least one of the impellers while forming an adjoining chamber (26);- the adjusting device (18) of the switchable coupling (50,52) being arranged in the adjoining chamber (26) and forming a first operating material supply channel (42) or chamber, and being actable upon by the pressure prevailing therein;- the operating material supply channel (42) or chamber being connectable, at least indirectly, to an operating material supply source (not shown);- having means (18) for influencing the transmission behavior of the hydrodynamic component (displacement of the secondary impeller) comprising at least one built-in mechanical part (18) that acts, at least indirectly, on the operating circuit that adjusts itself in the operating chamber;- having an adjusting device (piston 18) associated with the built-in mechanical part and means for acting upon said device with a differential pressure that results from the pressure in the first operating material

Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
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guide channel or chamber or in a channel or chamber coupled thereto or in the housing interior (26), and from a control pressure (23).

2.1. The subject matter of claim 1 differs from the known hydrodynamic coupling in that

the means comprises a built-in mechanical part that is arranged on an impeller in the form of separate elements that can be introduced into the operating chamber or of elements that form portions of the impeller walls, and said mechanical part acts, at least indirectly, on the operating circuit that adjusts itself in the operating chamber.

Therefore, the subject matter of claim 1 is novel (PCT Article 33(2)).

3. Therefore, the problem to be solved by the present application can be regarded as that of influencing, in certain areas, the moment that can be absorbed by the hydrodynamic coupling, namely in areas of high slippage.

3.1. The solution to this problem as proposed in claim 1 of the present application involves an inventive step for the following reasons (PCT Article 33(3)):

The additional features of claim 1 are not

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	<p>rendered obvious by the known prior art.</p> <p>4. Claims 2-18 are dependent on claim 1 and therefore likewise meet the PCT requirements for novelty and inventive step.</p>

Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

5. Reference sign "A" for the output (claim 1 was not found in the drawings.
6. Reference sign "46" for the adjoining chamber (claim 1) was denoted as "47" in the description (page 13, line 29) and in figures 1-4.
7. Claim 14 and the description (page 19, line 29 to page 20, line 2) appear to contradict each other. It is not clear whether or not the built-in mechanical parts are connected to the secondary impeller.